

National Institute
of Standards and Technology



National Voluntary
Laboratory Accreditation Program

ISO/IEC 17025:1999
ISO 9002:1994

Scope of Accreditation



Revised 9/23/2003

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CALIBRATION LABORATORIES

NVLAP LAB CODE 200302-0

VLSI STANDARDS, INC.

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NVLAP Code: 20/A01

ANSI/NCSL Z540-1-1994; Part 1

Compliant

DIMENSIONAL

NVLAP Code: 20/D05

Length & Diameter

Nano Lattice Standards (NLS)

<i>Nominal Pitch in nm</i>	<i>Best Uncertainty (\pm) in nm^{note 1}</i>	<i>Percentage Uncertainty in %^{note 2}</i>
100	0.51	0.51
200	1.02	0.51
400	2.04	0.51
800	4.08	0.51
1000	5.10	0.51

June 30, 2004

Effective through

A handwritten signature in black ink, appearing to read 'William R. Muhl'.

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VLSI STANDARDS, INC.

NVLAP Code: 20/D12

Surface Texture

STEP HEIGHT STANDARDS (SHS) - Thin

<i>Nominal Height</i>	<i>Best Uncertainty (\pm)^{note 1}</i>	<i>Percentage Uncertainty (\pm)^{note 2}</i>
8 nm	0.3 nm	3.4
18 nm	0.6 nm	3.5
44 nm	0.5 nm	1.1
88 nm	1.0 nm	1.1
180 nm	1.8 nm	0.9
450 nm	2.3 nm	0.5
940 nm	4.7 nm	0.5

STEP HEIGHT STANDARDS (SHS) - Thick

1.8 μm	0.01 μm	0.5
4.5 μm	0.05 μm	1.1
8.0 μm	0.06 μm	0.7
14.5 μm	0.08 μm	0.5

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VLSI STANDARDS, INC.

19.5 μm	0.10 μm	0.5
24 μm	0.12 μm	0.5
41 μm	0.19 μm	0.5
50 μm	0.23 μm	0.5
76 μm	0.35 μm	0.5
100 μm	0.46 μm	0.5

NVLAP Code: 20/D17

Film Thickness Standards (FTS)

FTS for SiO₂ films

<i>Nominal Thickness in nm</i>	<i>Best Uncertainty (\pm) in nm^{note 1}</i>	<i>Percentage Uncertainty (\pm)^{note 2}</i>
4.5	0.3	6.67
7.5	0.3	4.00
12	0.4	3.33
25	0.3	1.20
50	0.4	0.80
100	0.3	0.30
125	0.3	0.24

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200	0.3	0.15
400	0.3	0.15
675	0.4	0.06
1010	0.7	0.07

1. Represents an expanded uncertainty using a coverage factor, $k=2$.
2. Normalized to the nominal value.

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